

Claim Amendments

1. (Currently Amended) A method, comprising

determining that a device related operation happens in a virtual machine by a kernel component of a virtual machine monitor through an operation transition from the virtual machine to the kernel component, wherein the device related operation includes an operation inputting/outputting data to/from an input/output device; and

determining whether virtualization of the device related operation can be handled by a first virtual input/output device installed inside of the kernel component of the virtual machine monitor.

2. (Currently Amended) The method of claim 1, wherein the first virtual input/output device comprises at least one of a virtual keyboard, virtual mouse, virtual audio device, virtual video device, ~~virtual event timer and virtual interrupt controller~~ and a virtual network card.

3. (Original) The method of claim 1, wherein the virtual machine monitor is a hybrid virtual machine monitor.

4. (Original) The method of claim 3, wherein the kernel component is a hypervisor of the hybrid virtual machine monitor.

5. (Original) The method of claim 1, wherein the virtual machine monitor is a host virtual machine monitor.

6. (Currently Amended) The method of claim 5, wherein the kernel component is a ~~kernel~~ kernel virtual machine monitor.

7. (Currently Amended) The method of claim 1, further comprising:
passing the device related operation to a second virtual input/output device installed outside of the kernel component of the virtual machine monitor, in response to determining that the virtualization of the device related operation can not be handled by the first virtual input/output device.

8. (Currently Amended) The method of claim 1, further comprising:
initiating an interrupt by ~~the first~~ a third virtual device installed inside of the kernel component of the virtual machine monitor, wherein the third virtual device comprises at least one of a virtual event timer and virtual interrupt controller; and
injecting the interrupt from the ~~first~~ third virtual device to the virtual machine through another operation transition from the kernel component to the virtual machine.

9. (Currently Amended) A system, comprising:
a processor, and

a virtual machine monitor coupled to the processor, comprising a kernel component to:

determine that a device related operation happens in a virtual machine through an operation transition from the virtual machine to the kernel component, ~~wherein the kernel component further comprises a first virtual device~~ wherein the device related operation includes an operation inputting/outputting data to/from an input/output device; and

determine whether virtualization of the device related operation can be handled by a first virtual input/output device installed inside of the kernel component.

10. (Currently Amended) The ~~virtual machine monitor~~ system of claim 9, wherein the first virtual input/output device comprises at least one of a virtual keyboard, virtual mouse, virtual audio device, virtual video device, ~~virtual event timer and virtual interrupt controller~~ and a virtual network card.

11. (Currently Amended) The ~~virtual machine monitor~~ system of claim 9, wherein the virtual machine monitor is a hybrid virtual machine monitor.

12. (Currently Amended) The ~~virtual machine monitor~~ system of claim 11, wherein the kernel component is a hypervisor of the hybrid virtual machine monitor.

13. (Currently Amended) The ~~virtual machine monitor~~ system of claim 9, wherein the virtual machine monitor is a host virtual machine monitor.

14. (Currently Amended) The ~~virtual machine monitor~~ system of claim 13, wherein the kernel component is a kernel virtual machine monitor of a host operating system.

15. (Currently Amended) The ~~virtual machine monitor~~ system of claim 9, further comprising:

a second virtual input/output device installed outside of the kernel component of the virtual machine monitor to handle the device related operation in response to determining that the virtualization of the device related operation can not be handled by the first virtual device.

16. (Currently Amended) The ~~virtual machine monitor~~ system of claim 9, ~~wherein the first virtual device is further~~ comprises a third virtual device, installed inside of the kernel component of the virtual machine monitor, to initiate an interrupt and inject the interrupt from the first a third virtual device to the virtual machine through another operation transition from the kernel component to the virtual machine, wherein the third virtual device comprises at least one of a virtual event timer and virtual interrupt controller.

17. (Currently Amended) A tangible computer-readable medium comprising a plurality of instructions which when executed result in an apparatus:

determining that a device related operation happens in a virtual machine by a kernel component of a virtual machine monitor through an operation transition from the virtual machine to the kernel component, wherein the device related operation includes an operation inputting/outputting data to/from an input/output device;

determining whether virtualization of the device related operation can be handled by a first virtual input/output device installed inside of the kernel component of the virtual machine monitor; and

passing the device related operation to a second virtual ~~hardware~~ input/output device installed outside of the kernel component of the virtual machine monitor, in response to determining that the virtualization of the device related operation can not be handled by the first virtual hardware device.

18. (Currently Amended) The tangible computer-readable medium of claim 17, wherein the first virtual ~~hardware~~ input/output device comprises at least one of ~~a virtual input/output device, virtual interrupt controller, and virtual event timer~~ a virtual keyboard, virtual mouse, virtual audio device, virtual video device and a virtual network card.

19. (Currently Amended) The tangible computer-readable medium of claim 17, wherein the second virtual hardware input/output device comprises at least one of a ~~virtual input/output device, virtual interrupt controller, and virtual event timer~~ a virtual keyboard, virtual mouse, virtual audio device, virtual video device and a virtual network card.

20. (Currently Amended) The tangible computer-readable medium of claim 17, wherein the virtual machine monitor is a hybrid virtual machine monitor.

21. (Currently Amended) The tangible computer-readable medium of claim 17, wherein the kernel component is a hypervisor of the hybrid virtual machine monitor.

22. (Currently Amended) The tangible computer-readable medium of claim 17, wherein the virtual machine monitor is a host virtual machine monitor.

23. (Currently Amended) The tangible computer-readable medium of claim 17, wherein the kernel component is a kernel virtual machine monitor.

24. (Currently Amended) The tangible computer-readable medium of claim 17, wherein the plurality of instructions further result in the apparatus:

initiating an interrupt by ~~the first~~ a third virtual hardware device installed inside
of the kernel component of the virtual machine monitor, wherein the third virtual device
comprises at least one of a virtual event timer and virtual interrupt controller; and

injecting the interrupt from the ~~first~~ third virtual hardware device to the virtual
machine through another operation transition from the kernel component to the virtual
machine.